

We claim:

1. An isolated nucleic acid molecule comprising the nucleic acid sequence of SEQ ID NO:1.
- 5 2. The isolated nucleic acid molecule of claim 1, wherein the nucleic acid molecule is selected from the group consisting of a DNA molecule and an RNA molecule.
- 10 3. An isolated nucleic acid molecule comprising a nucleic acid sequence that hybridizes to the nucleic acid sequence of SEQ ID NO:1.
- 15 4. The nucleic acid molecule of claim 3, wherein the nucleic acid sequence hybridizes under stringent conditions.
- 20 5. The isolated nucleic acid molecule of claim 4, wherein the hybridization occurs in 6X SSC at about 45° C, followed by at least one wash in 0.2X SSC, 0.1% SDS at about 50-65°C.
- 25 6. An isolated nucleic acid molecule comprising a promoter exhibiting the biological activity of the *sod-3* promoter, wherein the nucleic acid sequence is selected from the group consisting of:
 - (a) a nucleic acid sequence that has 90% or greater sequence identity to the nucleic acid sequence of SEQ ID NO:1.
 - (b) a fragment of the nucleic acid sequence of (a) or of the sequence of SEQ ID NO:1; and
 - (c) a derivative of the nucleic acid sequence of (a) or (b).
- 30 7. The nucleic acid molecule of claim 6, wherein the nucleic acid sequence is (a).
8. The nucleic acid molecule of claim 6, wherein the nucleic acid sequence is (b).
9. The nucleic acid molecule of claim 6, wherein the nucleic acid sequence is (c).

10. An isolated nucleic acid molecule comprising the nucleic acid molecule of claim 1 and a nucleic acid sequence conferring the activity of a reporter gene.
11. An isolated nucleic acid molecule comprising the nucleic acid molecule of claim 3 and a nucleic acid sequence conferring the activity of a reporter gene.
12. A vector comprising the nucleic acid molecule of claim 1.
13. The vector of claim 12, wherein the nucleic acid molecule comprises DNA.
14. The vector of claim 13, wherein the DNA is linked to regulatory elements which ensure the transcription and the synthesis of a translatable RNA of a reporter gene in eukaryotic cells.
15. A vector comprising the nucleic acid molecule of claim 3.
16. The vector of claim 15, wherein the nucleic acid molecule comprises DNA.
17. The vector of claim 16, wherein the DNA is linked to regulatory elements which ensure the transcription and the synthesis of a translatable RNA of a reporter gene in eukaryotic cells.
18. A transgenic host cell transformed with the nucleic acid molecule of claim 1.
19. The transgenic host cell of claim 18, wherein the transgenic host cell is a nematode cell.
20. A transgenic host comprising the host cell of claim 18.
21. The transgenic host of claim 20, wherein the transgenic host is a nematode.
22. A transgenic host cell transformed with the nucleic acid molecule of claim 3.

23. The transgenic host cell of claim 21, wherein the transgenic host cell is a nematode cell.

24. A transgenic host comprising the host cell of claim 22.

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25. The transgenic host of claim 24, wherein the transgenic host is a nematode.

26. A method for identifying a modulating compound, the method comprising

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(a) providing transgenic *C. elegans* comprising the nucleic acid molecule of claim 1;

(b) contacting the transgenic *C. elegans* with at least one compound;

(c) measuring reporter gene activity in the absence and in the presence of the at least one compound;

(d) comparing the reporter gene activities of step (c); and

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(e) selecting thereby at least one compound.

27. The method of claim 26, wherein the *C. elegans* are L1 larvae.

28. The method of claim 26, wherein the step of measuring reporter gene activity

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further comprising measuring the activity in the presence of at least one reference compounds.

29. A method for identifying a modulating compound, the method comprising

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(a) providing transgenic *C. elegans* comprising the nucleic acid molecule of claim 3;

(b) contacting the transgenic *C. elegans* with at least one compound;

(c) measuring reporter gene activity in the absence and in the presence of the at least one compound;

(d) comparing the reporter gene activities of step (c); and

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(e) selecting thereby at least one modulating compound.

30. The method of claim 29, wherein the *C. elegans* are L1 larvae.

31. The method of claim 29, wherein the step of measuring reporter gene activity further comprising measuring the activity in the presence of at least one reference compounds.

5 32. A process for identifying modulators of the *DAF-2/IR* pathway, the method comprising:

- (a) providing transgenic *C. elegans* L1 larvae comprising the nucleic acid molecule of claim 1;
- (b) contacting the transgenic *C. elegans* L1 larvae with at least one compound
10 under stressful conditions;
- (c) measuring the amount of L1 larvae in the absence and in the presence of the at least one compound;
- (d) comparing the amount of L1 larvae which entered into *dauer* larvae state with the amount of L1 larvae which did not enter into *dauer* larvae state; and
- 15 (e) selecting thereby at least one modulating compound.

33. The method of claim 32, wherein the step of measuring the amount of L1 larvae further comprises measuring the amount of L1 larvae in the presence of at least one reference compound.

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34. A process for identifying modulators of the *DAF-2/IR* pathway, the method comprising:

- (a) providing transgenic *C. elegans* L1 larvae comprising the nucleic acid molecule of claim 3;
- 25 (b) contacting the transgenic *C. elegans* L1 larvae with at least one compound under stressful conditions;
- (c) measuring the amount of L1 larvae in the absence and in the presence of the at least one compound;
- (d) comparing the amount of L1 larvae which entered into *dauer* larvae state with the amount of L1 larvae which did not enter into *dauer* larvae state; and
- 30 (e) selecting thereby at least one modulating compound.

35. The method of claim 34, wherein the step of measuring the amount of L1 larvae further comprises measuring the amount of L1 larvae in the presence of at least one reference compound.